

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently amended) A dissymmetric particle of nanometric or mesoscopic size, ~~that has~~ consisting of a first part, a second part, and a coupling agent ~~consisting of an inorganic material A and a second part consisting of an organic material B, wherein:~~
  - the first part consists of a single particle of an inorganic material A ~~is of~~ a mineral oxide or a metal, of between 50 and 250 nm, and having an outer surface to which is adsorbed or covalently grafted the coupling agent;
  - the second part consists of a single substantially spherical nodule of organic material B ~~is of~~ a polymer comprised of recurrent vinyl units, ~~derived from a vinyl compound;~~
  - ~~the second part is constituted by a single substantially spherical nodule having an outer surface which is coupled to an outer surface of the first part by the coupling agent; so as to form said dissymmetric particle; and~~
  - ~~the size of the first part is between 50 nm and 250 nm,~~~~wherein said outer surface of said spherical nodule is coupled to said outer surface of said first part by means of a coupling agent adsorbed or covalently grafted to said outer surface of said first part,~~  
~~and wherein the dissymmetric particle is produced by bringing into contact the first part having coupling agents attached thereto with a precursor of the~~

~~second part in a solvent, and by controlling the concentration and the size of the first part in the solvent so that the ratio between the number of said first parts in the solvent and the number of said second parts to be formed in the solvent is close to 1~~ the coupling agent is a methacryloylalkyltrialkoxysilane, or a macromonomer of the group consisting of hydroxycelluloses, polyvinylpyrrolidones, polyacrylic acids, and poly(polyvinyl) alcohols.

2. (Canceled)
3. (Previously Presented) The particle as claimed in claim 1, wherein the inorganic material A is an oxide chosen from silica, iron oxides, aluminosilicates, titanium dioxide or alumina.
4. (Previously Presented) The particle as claimed in claim 1, wherein the inorganic material A is a metal chosen from metals that are stable in an aqueous medium.
5. (Previously Presented) The particle as claimed in claim 1, wherein the inorganic material bears an organic group.
6. (Previously Presented) The particle as claimed in claim 5, wherein the organic group is chosen from alkyl groups, amine functions, thiol functions and nitrile functions.

7. (Previously Presented) The particle as claimed in claim 1, wherein the polymer comprises recurrent units  $-CR=CR'-$ , which may be identical or different, in which:
  - R represents H or an alkyl group;
  - R' represents H, an alkyl group, an aryl group, an alkylaryl group, an alkenylaryl group, a pyridyl group, a nitrile group, a group  $-COOR''$  or a group  $-OC(O)R''$  in which R'' is H, an alkyl or an alkenyl.
8. (Previously Presented) The particle as claimed in claim 7, wherein the alkyl group or the aryl group bears a functional group.
9. (Previously Presented) The particle as claimed in claim 7, wherein the polymer is crosslinked or noncrosslinked.
10. (Previously Presented) The particle as claimed in claim 1, wherein the inorganic part has the shape of a sphere.
11. (Previously Presented) The particle as claimed in claim 10, wherein the particle has the shape of a dumbbell, the organic and inorganic parts having substantially the same size.
12. (Previously Presented) The particle as claimed in claim 10, wherein the particle has the shape of a snowman, the inorganic part having a size different from the organic part.

13. (Previously Presented) The particle as claimed in claim 1, wherein the inorganic part has the shape of an ellipse, of a disk, of a block or of a rod.
14. (Previously Presented) The particle as claimed in claim 1, wherein the inorganic material is silica and the organic material B is a polystyrene or a copolymer of styrene and of divinylbenzene.
15. (Withdrawn) A method for preparing a dissymmetric particle as claimed in claim 1, wherein it comprises the following steps:
  - a) during a first step, the surface of a first part having a size of between 50 nm and 250 nm and consisting of an inorganic material A is modified with coupling agents C comprising a function  $F_C$  which exhibits affinity for one or more precursors of a second part consisting of an organic material B, said coupling agents being adsorbed or covalently grafted to an outer surface of said first part;
  - b) during a second step, the modified first part obtained at the end of step a) is brought into contact with the precursor(s) of the second part, in the presence of a free-radical initiator and of a surfactant in solution in a solvent wherein the concentration and the size of the first part in the solvent are controlled so that the ratio between the number of said first parts in the solvent and the number of said second parts to be formed in the solvent is close to 1.

16. (Withdrawn) The method as claimed in claim 15, wherein the particle is extracted from the reaction medium by evaporation of the solvent or by lyophilization.
17. (Withdrawn) The method as claimed in claim 15, wherein the first part is used, for step a), in the form of a colloidal suspension for which the solids content is between 2 and 35%, and for which the pH is adjusted so as to allow the interaction with the coupling agent C.
18. (Withdrawn) The method as claimed in claim 15, wherein the first part is a silica particle having a diameter of approximately 100 nm.
19. (Withdrawn) The method as claimed in claim 15, wherein the function  $F_C$  is a vinyl group, or a vinyl, allyl, styryl, methacryloyl or acryloyl group.
20. (Withdrawn) The method as claimed in claim 15, wherein step a) is carried out by bringing the first part into contact with a macromonomer consisting of a macromolecule having a hydrophilic chain that ends with a polymerizable function  $F_C$ , and the reaction medium is stirred.
21. (Withdrawn) The method as claimed in claim 20, wherein the macromonomer is chosen from poly(ethylene oxide)s, hydroxycelluloses, poly(vinylpyrrolidone)s, poly(acrylic acid)s or poly(polyvinyl alcohol)s, said compounds bearing the function  $F_C$ .

22. (Withdrawn) The method as claimed in claim 15, wherein step a) is carried out by covalent grafting of a coupling agent bearing a function  $F_C$  that is copolymerizable with the precursor(s) of the second part.
23. (Withdrawn) The method as claimed in claim 22, wherein the first part is a mineral oxide and the coupling agent is chosen from organosilanes corresponding to the formula  $R^1_nSiX_{4-n}$  ( $n = 1$  to  $3$ ), in which  $X$  is a hydrolyzable group and  $R^1$  is a radical comprising the functional group  $F_C$ .
24. (Withdrawn) The method as claimed in claim 23, wherein the coupling agent is a methacryloylalkyltrialkoxysilane.
25. (Withdrawn) The method as claimed in claim 22, wherein the first part is a metal, and the coupling agent is chosen from organothiols  $R^1SH$  or amines  $R^1NH_2$  in which  $R^1$  is a substituent bearing the functional group  $F_C$ .
26. (Withdrawn) The method as claimed in claim 25, wherein the coupling agent is 4-vinylaniline.
27. (Withdrawn) The method as claimed in claim 15, wherein step a) is carried out by suspending the first part at a pH close to neutrality, and adding an amphiphilic compound consisting of a hydrophobic part that has a polymerizable group and of a polar head that bears a charge opposite to that

of the surface of the first part.

28. (Withdrawn) The method as claimed in claim 27, wherein the amphiphilic compound is chosen from compounds derived from styrene sulfonates and quaternary alkylammoniums, the two types of compounds bearing a hydrophobic group.
29. (Withdrawn) The method as claimed in claim 15, wherein step b) is carried out by bringing the modified first part of inorganic material A obtained at the end of step a) into contact with a monomer which is a precursor of the second part, in the presence of a polymerization initiator, said monomer bearing functions  $F_B$  capable of reacting with the functions  $F_C$ .
30. (Withdrawn) The method as claimed in claim 15, wherein step b) is carried out by bringing the first part obtained at the end of step a) into contact with an oligomer of the polymer B, in the presence of a polymerization initiator.
31. (Withdrawn) The method as claimed in claim 15, wherein the dissymmetric particles obtained at the end of step b) are subjected to a further treatment aimed at modifying the surface groups of the material A that were not modified during step b).
32. (Withdrawn) The method as claimed in claim 29, wherein the monomer precursor is chosen from compounds having a vinyl group that plays the role

of polymerizable function  $F_B$ .

33. (Withdrawn) The method as claimed in claim 32, wherein the monomer corresponds to formula  $HRC=CHR'$  in which:
- R represents H or an alkyl group;
  - R' represents H, an alkyl group, an aryl group, an alkylaryl group, an alkenylaryl group, a pyridyl group, a nitrile group, a group  $-COOR''$  or a group  $-OC(O)R''$  in which R'' is H, an alkyl or an alkenyl.
34. (Withdrawn) The method as claimed in claim 33, wherein the monomer is chosen from styrene,  $\alpha$ -methylstyrene, vinylpyridine, vinyl acetate, vinyl propionate, methyl methacrylate, ethyl acrylate, butyl acrylate, ethylhexyl methacrylate, acrylonitrile or methacrylonitrile.
35. (Withdrawn) The method as claimed in claim 29, wherein a mixture comprising one or more monomers having a group  $F_B$ , and a monomer comprising a second group  $F_B$ , is used.
36. (Withdrawn) The method as claimed in claim 30, wherein the oligomer is chosen from the polymers or copolymers obtained from monomers having a vinyl group that plays the role of polymerizable function  $F_B$  and optionally bearing a function that is crosslinking in nature.
37. (Withdrawn) The method as claimed in claim 15, wherein the solvent is



chosen from water or water-alcohol mixtures in water/alcohol proportions of between 100/0 and 50/50.

38. (Withdrawn) The method as claimed in claim 15, wherein the surfactant is chosen from anionic, cationic or nonionic surfactants.

39. (Previously Presented) The particle of claim 1, wherein the size of the second part is between 50 nm and 250 nm.